

What Is Claimed Is:

1. A method for manufacturing a low-sintering PZT-based piezoelectric ceramic material, the ions to be added being added in the form of powdered oxides and/or powdered carbonates as starting compounds, mixed together and then calcined to form the piezoelectric ceramic material, wherein after calcining the starting compounds, lithium in ionic form is added to the mixture in an amount in the range of 0.01 to 0.1 wt.% in relation to the weight of the PZT ceramic.
2. The method as recited in Claim 1, wherein lithium is added in the form of Li_2CO_3 or LiNO_3 .
3. The method as recited in Claim 1 or Claim 2, wherein PZT compounds simply doped using rare earth metals, in particular La or Nb, are used as the PZT base materials.
4. The method as recited in Claim 1 or Claim 2, wherein PZT compounds doped using combinations of elements selected from the group made up of Ca, La, Nb, Fe, and Cu are used as the PZT base materials.
5. The method as recited in Claim 4, wherein a low-sintering piezoelectric ceramic material having significantly increased elongation values compared to lithium-free materials is obtained.
6. The method as recited in one of the preceding claims, wherein the sintering temperatures are in the range of 850°C to 950°C, preferably 900°C.
7. Use of PZT-based low-sintering piezoelectric ceramic material as recited in one of Claims 1 through 6 for the manufacture of piezoelectric multilayer actuators having internal electrodes made of pure silver.

8. Use of piezoelectric multilayer actuators as recited in
Claim 7 as multilayer actuators in motor vehicle injection
systems.